

ABSTRACT

A golf club shaft is formed with an elongated body using a combination of fiber-reinforced plastics and metal-coated fibers to obtain the optimally characterized golf club for a particular player. In one embodiment, a sheet-rolled or filament wound core is covered by a filament wound outer layer having at least one ply including metal-coated fibers. The fibers can be metal-coated with metals such as: nickel, titanium, platinum, zinc, copper, brass, tungsten, cobalt, gold or silver. The use of metal-coated fibers allows the use of combinations of fiber reinforced plastic and metal-coated fibers in producing golf shafts with optimum performance properties. For example, the use of metal-coated fibers allows the addition of weight to the shaft without significantly influencing its longitudinal or torsional rigidity. In alternate embodiments, specific placement of the metal-coated fibers is possible to add weight to predetermined points in the shaft to shift the flex and balance points without varying the shaft's torsional properties and while providing the optimum flex for a given golf club design. In a still further example, two or more types of metal-coated fibers can be used at different portions on the shaft.